



Celebrating 100 Years of Career Readiness

2018-2019 Pilot Technical Skills Assessment

Automated Manufacturing

Statewide Question Level Results

Pilot Assessment: Automated Manufacturing	Avg. Score
Number tested: 17	
CONTENT STANDARD 1.0: LAB ORGANIZATION AND SAFETY PROCEDURES	72.94%
Performance Standard 1.1: General Lab Safety Rules and Procedures	71.90%
Standard 3: 1.1.3. Comply with the required use of safety glasses, ear protection, gloves, and shoes during lab/shop activities (i.e., personal protection equipment PPE).	61.76%
Standard 4: 1.1.4. Operate lab equipment according to safety guidelines.	76.47%
Standard 5: 1.1.5. Identify and use proper lifting procedures and proper use of support equipment.	94.12%
Standard 6: 1.1.6. Utilize proper ventilation procedures for working within the lab/shop area.	100.00%
Standard 7: 1.1.7. Identify the location and the types of fire extinguishers and other fire safety equipment; demonstrate knowledge of the procedures for using fire extinguishers and other fire safety equipment.	52.94%
Standard 10: 1.1.10. Identify and wear appropriate clothing for lab/shop activities.	58.82%
Standard 11: 1.1.11. Secure hair and jewelry for lab/shop activities.	100.00%
Standard 13: 1.1.13. Locate and interpret safety data sheets (SDS).	41.18%
Performance Standard 1.2: Hand Tools	66.67%
Standard 2: 1.2.2. Identify standards and metric designation.	52.94%
Standard 3: 1.2.3. Demonstrate the proper techniques when using hand tools.	47.06%
Standard 5: 1.2.5. Identify proper cleaning, storage and maintenance of tools.	100.00%
Performance Standard 1.3: Power Tools and Equipment	82.35%
Standard 1: 1.3.1. Identify power tools and their appropriate usage.	70.59%
Standard 2: 1.3.2. Identify equipment and their appropriate usage.	88.24%
Standard 3: 1.3.3. Demonstrate the proper techniques when using power tools and equipment.	88.24%
CONTENT STANDARD 2.0: APPLY FUNDAMENTAL PRINT READING, MEASURING, AND CADD	66.78%
Performance Standard 2.1: Demonstrate Print Reading Practices	66.18%
Standard 1: 2.1.1. Interpret basic elements of a technical drawing (i.e., title block information, dimensions).	52.94%
Standard 2: 2.1.2. Identify industry standard symbols (i.e., hydraulic, pneumatic, electrical, welding, mechanical).	82.35%
Standard 3: 2.1.3. Prepare a materials list from a technical drawing.	88.24%
Standard 4: 2.1.4. Describe various types of drawings (i.e., part, assembly, pictorial, orthographic, isometric, and schematic).	17.65%
Standard 5: 2.1.5. Understand dimensioning and tolerance, sectional drawings, fasteners, tables, charts, and assembly drawings.	78.43%
Performance Standard 2.2: Demonstrate Measuring and Scaling Techniques	64.71%
Standard 1: 2.2.1. Identify industry standard units of measure.	47.06%
Standard 3: 2.2.3. Determine appropriate engineering and metric scales.	55.88%
Standard 4: 2.2.4. Measure and calculate speed, distance, object size, area, and volume.	94.12%
Standard 5: 2.2.5. Determine and apply the equivalence between fractions and decimals.	94.12%
Standard 6: 2.2.6. Demonstrate proper use of precision measuring tools (i.e., micrometer, dial indicator, dial caliper) and inspecting parts to print.	61.76%

Performance Standard 2.3 CADD, CAM	88.24%
Standard 2: 2.3.2. Interpret and create design and working drawings.	88.24%
CONTENT STANDARD 3.0: APPLY FUNDAMENTAL POWER SYSTEM PRINCIPLES	46.41%
Performance Standard 3.1: Identify and Utilize Basic Mechanical Systems	61.76%
Standard 1: 3.1.1. Understand examples of the six simple machines, their attributes and components.	58.82%
Standard 3: 3.1.3. Explain concepts of mechanical advantage.	64.71%
Performance Standard 3.2: Identify and Utilize Basic Fluid Systems	31.37%
Standard 2: 3.2.2. Identify and define the components of fluid systems.	17.65%
Standard 5: 3.2.5. Explain the difference between gauge pressure and absolute pressure.	35.29%
Standard 7: 3.2.7. Discuss mechanical advantage using Pascal's law.	41.18%
Performance Standard 3.3: Identify and Utilize Basic Electrical Systems	50.00%
Standard 1: 3.3.1. Define AC and DC electrical systems and terminology.	64.71%
Standard 5: 3.3.5. Compute values of current, resistance, and voltage using Ohm's Law.	47.06%
Standard 7: 3.3.7. Introduce single-phase and three-phase AC power.	23.53%
Standard 10: 3.3.10. Explain electrical motor systems and motor controls by application.	64.71%
CONTENT STANDARD 4.0: IDENTIFY AND APPLY MANUFACTURING PROCESSES	62.35%
Performance Standard 4.1: Identify Material Properties and Science	62.75%
Standard 1: 4.1.1. Identify the major material families used in manufacturing.	52.94%
Standard 2: 4.1.2. Differentiate between the various types of material properties and their application.	58.82%
Standard 4: 4.1.4. Explain how production is affected by the availability, quality and quantity of resources.	76.47%
Performance Standard 4.2: Identify Manufacturing Processes	70.59%
Standard 1: 4.2.1. Identify and describe the five major manufacturing processes (i.e., forming, separating, joining, conditioning, and finishing).	70.59%
Standard 2: 4.2.2. Discuss the impact of manufacturing processes on the environment.	70.59%
Performance Standard 4.3: Apply Manufacturing Processes	63.24%
Standard 1: 4.3.1. Demonstrate cutting methods of metals and plastics.	88.24%
Standard 2: 4.3.2. Demonstrate drilling methods of metals and plastics.	11.76%
Standard 3: 4.3.3. Demonstrate grinding methods of metals.	64.71%
Standard 4: 4.3.4. Demonstrate finishing methods of metals and plastics.	88.24%
Performance Standard 4.4: Identify Fasteners	41.18%
Standard 1: 4.4.1. Identify various fastening methods (e.g., rivets, welds, adhesive, screws, seams, etc.).	41.18%
CONTENT STANDARD 5.0: APPLY FUNDAMENTAL ELECTRONIC AND INSTRUMENTATION PRINCIPLES	47.06%
Performance Standard 5.1: Demonstrate Control Technology and Automation Principles	47.06%
Standard 1: 5.1.1. Research the history and fundamentals of automation and control systems.	17.65%
Standard 2: 5.1.2. Identify applications of control logic.	52.94%
Standard 3: 5.1.3. Distinguish programmable controllers and PLC components and their functions.	47.06%
Standard 4: 5.1.4. Interpret programming diagrams.	70.59%
CONTENT STANDARD 6.0: MACHINING	65.78%
Performance Standard 6.1: Manual Machining	71.43%
Standard 3: 6.1.3. Deburr workpieces.	88.24%
Standard 5: 6.1.5. Setup and operate grinders.	52.94%
Standard 6: 6.1.6. Set up and operate lathes including tool and parts setups.	79.41%
Standard 7: 6.1.7. Set up and operate milling machines including tool and parts setups.	73.53%
Performance Standard 6.2: CNC Machining	55.88%
Standard 5: 6.2.5. Demonstrate the ability to verify and dry run the program.	70.59%
Standard 6: 6.2.6. Demonstrate the ability run the NC program.	70.59%
Standard 7: 6.2.7. Demonstrate an understanding of NC programming.	52.94%
Standard 8: 6.2.8. Demonstrate an understanding of coordinate systems.	29.41%
CONTENT STANDARD 7.0: ADDITIVE (3D) PRINTING	47.06%
Performance Standard 7.1: Operation	47.06%
Standard 1: 7.1.1. Setup and operate a 3D printer.	47.06%

CONTENT STANDARD 8.0 ROBOTICS AND MATERIALS HANDLING SYSTEMS	94.12%
Performance standard 8.1 Process Automation	94.12%
Standard 1: 8.1.1. Demonstrate the knowledge of robotics and material handling equipment.	94.12%
Standard 2: 8.1.2. Discuss conveyors, robotic arms, material handlers, pick-and-place technology.	94.12%